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PATENT SPECIFICATION

NO DRAWINGS

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COMPLETE SPECIFICATION

Bath Oil Composition

We, THE PROCTER & GAMBLE COMPANY, a corporation organised under the laws of the State of Ohio, United States of America, of 301 East Sixth Street, Cincinnati, Ohio, United States of America, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a bath oil of novel composition. More particularly, this invention relates to a bath oil, suitable for cosmetic and therapeutic purposes, which is comprised of particular fatty esters and mineral oil, and which, in its preferred embodiment, contains lower molecular weight alcohols and nonionic surfactants.

The beneficial effect of oil on the skin is well known. Dermatologists have long extolled the merits of oil in protecting and reconditioning skin, especially dry skin.

In this connection, dry, pruritic, scaly and pediatric dermatoses all appear to be caused, at least to some degree, by lack of water in the outer skin layer, the stratum corneum. Skin lipids play a significant role in keeping the skin soft and flexible by preventing water loss from the stratum corneum. The cells of this outer layer are highly hydrophilic and will swell considerably when immersed in water or when water is supplied by internal means through the sweat glands. However, when the humidity is low, water present in the skin may be lost at a higher rate than it can be replaced internally. This water loss, in turn, tends to cause skin dryness and related problems. The purpose of the bath oil is to augment the skin lipids by forming a protective film on the skin. The bath oil thus assists in keeping moisture in the stratum corneum and, accordingly, tends to keep the skin soft, silky and smooth without the danger of chapping.

In the first attempts to use a bath oil, oil was simply poured into the water and an oil film was formed on the surface of the water. As the bather stepped into and out of the bath water, his skin was coated with the oil floating on the water. This method of application left the skin with an excessively greasy feeling and was found to leave a visible coating of oil on the skin, some of which rubbed off on garments. The oil coating was also visible as a bathtub ring. Therapeutically, this method did accomplish the results of coating the skin to retard evaporation of moisture, but the problems it raised prevented wide consumer acceptance.

Improved bath oil compositions were later prepared by mixing with a mineral oil an ester such as isopropyl myristate, or isopropyl palmitate. Because of the addition of these esters, the resulting surface tension in the oil and ester mixture was less than that of the oil alone. Accordingly, the thickness of the molecular layer on the surface of the water was decreased. Reduction of the thickness of the bath oil layer alleviates the excessively greasy feeling caused by adsorption of excess oil on the skin, yet allows deposit of sufficient emollient to keep the skin soft, smooth and flexible. These esters also tend to act as extenders or spreading agents. These specific esters, however, failed to solve the problem of the formation of the unsightly oil ring in the bathtub satisfactorily.

It has now been discovered that an improved bath oil composition can be prepared which not only renders the skin as soft and pliable as previous products but which also does not give rise to the trouble-problem of bathtub rings.

According to the present invention a clear

homogeneous non-aqueous liquid composition consists of

from 20% to 80% by weight of at least one ester having a saturated aliphatic alcohol moiety of from 8 to 14 carbon atoms and an aliphatic carboxylic acid moiety of from 8 to 14 carbon atoms,

from 20% to 80% by weight of mineral or fatty oil,

from 0 to 30% by weight of an alcohol having from 2 to 10 carbon atoms in the molecule,

from 0 to 10% by weight of an unsubstituted amide, or a monoethanolamide or diethanolamide of a fatty acid having an acyl moiety of from 8 to 18 carbon atoms, and

from 0 to 10% by weight of a nonionic surface active agent other than said fatty acid amides,

up to 15% by weight of the total ester or esters optionally being replaced by one or more esters of which the ester acid moiety contains from 4 to 7 or from 15 to 18 carbon atoms, the other moiety containing from 4 to 18 carbon atoms.

The esters utilized in the bath oil compositions herein described are esters of branched or straight chain saturated aliphatic alcohols having from 8 to 14 carbon atoms, and preferably from 8 to 12 carbon atoms, and branched or straight chain aliphatic fatty acids having from 8 to 14 carbon atoms, and preferably from 8 to 12 carbon atoms. However, if necessary, the composition can tolerate up to 15% of the total ester mixture of esters of alcohols and/or fatty acids which deviate from the carbon atom limits by not more than 4 carbon atoms, i.e. containing from 4 to 7 or from 15 to 18 carbon atoms, and in calculating the percentage of esters in the composition the weight of such further esters is to be included.

It was surprising to discover that bath oil compositions containing these fatty esters fulfilled the objectives of this invention. Heretofore, it had been thought that only those esters which were of the isopropyl myristate and isopropyl palmitate variety could be used in combination with other bath oil ingredients. That is, it was heretofore considered essential to employ esters which structurally had a long acyl moiety and a very short alkyl chain. It was also suspected that esters having a more symmetrical configuration would not possess the property of being compatible with the essential bath oils.

It has been unexpectedly found, however, that the esters used in this invention are compatible with the other bath oil ingredients. Additionally, valuable therapeutic and emollient effects are attributed to these esters. They render a markedly smoother and silkier feeling to the skin than do the esters of the isopropyl myristate type. They also contribute substantially to alleviating the problem of bathtub rings.

Examples of specific esters suitable for use in this invention are 2-ethylhexyl dodecanoate, 2-ethylhexyl octanoate, octyl octanoate, octyl dodecanoate, dodecyl dodecanoate, decyl decanoate, decyl octanoate and octyl 1,1-dimethyldecanoate.

The esters of this invention can be utilized alone or they can be utilized in admixture with each other in any proportions. In fact, as a preferred embodiment of the present invention, esters derived from natural sources are utilized in this bath oil composition.

One of these preferred ester ingredients, characterized in Column 1 of Table I, can be prepared by the alcoholysis of a mixture of light cut coconut methyl esters with a mixture of light cut coconut alcohols. It is to be understood that light cut coconut, in this context, refers to a coconut fraction containing the following approximate distribution of carbon chain lengths: 4% C_6, 60% C_8, 35% C_{10} and 1% C_{12}. Another preferred ester component characterized in Column 2 of Table I, and referred to hereinafter as essentially octyl dodecanoate, can be prepared in the same manner by utilizing a mixture of middle cut coconut methyl esters, i.e. a fraction containing the following approximate distribution of carbon chain lengths: 1% C_{10}, 68% C_{12}, 24% C_{14}, and 7% C_{16}, and a mixture of light cut coconut alcohols as identified above.

An analysis of these coconut cut esters follows.

TABLE I

Analysis of Esters

	Col. 1 Essentially Octyl Octanoate	Col. 2 Essentially Octyl Dodecanoate	Col. 3 Essentially Dodecyl Dodecanoate
Molecular Weight	273	318	388
Saponification Value	203	176	145
Acid Value	0.05	0.02	0.5
Iodine Value	0.09	0.1	0.3
Hydroxyl Value	1.03	1.03	2.0
Melting point (°C)	−13	9	29
Specific Gravity (25°/25° C)	0.856	0.856	0.850

The liquid esters of the present invention, such as octyl octanoate, octyl dodecanoate, and 2-ethylhexyl dodecanoate are clear, mobile liquid with high boiling points and high flash points. They are very soluble in common organic solvents but insoluble in water. Dodecyl dodecanoate is a solid and is hard and wax-like with a more limited solubility in organic and inorganic solvents. Additionally, all of the esters of this invention are nearly odourless and colourless, which in conjunction with their low potential for irritation and oily consistency make them excellent bath oil adjuvants.

The esters of this invention can advantageously be prepared by the process known as alcoholysis. During this reaction, the alcohol moiety of an ester of an organic acid is replaced by that of another alcohol. Such methyl esters as those of octanoic, decanoic or dodecanoic acids can, accordingly, be permitted to react with alcohols containing from 8 to 14 carbon atoms to obtain the esters of this invention. Catalysts suitable for use in this reaction are strong bases such as the aluminium alkoxide of the free alcohol, sodium methoxide or acids such as sulphuric or hydrochloric acid. Other methods suitable for preparation of these esters are described in Kelley, *Organic Chemistry*, 2nd edition (1957), at pages 167—169.

According to the present invention, these esters should comprise from 20% to 80% by weight of the total bath oil composition. In the preferred embodiments of this invention, however, the esters are used at a level of from 40% to 75% by weight of the total composition. If these limitations are not met, optimum therapeutic emollient and cosmetic effects are not attained. In addition, the problem of bathtub rings is accentuated

Oils suitable for use with the hereinbefore disclosed esters may be selected from a large class of materials. The preferred oil is mineral oil, as it appears to be adsorbed in greater quantities on the skin and gives longer lasting comfort and smoothness.

Mineral oil is a colourless, transparent, oily liquid that is obtained from crude petroleum by refining. Essentially all of the unsaturated and aromatic hydrocarbons and other impurities are removed, and the resulting oil product is clear and water-white or nearly water-white. The Unites States Pharmacopeia defines two types of white mineral oil, or liquid petrolatum. One type, which has a kinematic viscosity of not more than 37 centistokes at 37.8°C. (100°F.) is termed light; the other, with a kinematic viscosity of not less than 38.1 centistokes at 37.8°C., is termed heavy. Since viscosity is usually expressed in Saybolt seconds, this distinction between grades should be understood as follows: A white mineral oil that has a Saybolt viscosity of not more than 172 at 100°F. is referred to as light white mineral oil, while one that has a Saybolt viscosity of not less than 177 at 100°F is termed heavy white mineral oil. While either of these mineral oils or mixtures thereof may advantageously be utilized in this composition, as an especially preferred embodiment herein, light white mineral oil is utilized herein.

When suitable standards for mildness, toxicity and odour are followed, fatty oils can be substituted in whole or in part for the mineral oil. Examples of such oils which can be used beneficially in the composition of this invention are vegetable oils such as sesame oil, cottonseed oil or corn oil. Other acceptable vegetable oils are sweet almond oil, olive oil, wheat germ oil, rice bran oil and peanut oil. Animal oils that may be utilized in this bath oil composition are lanolin, neat's foot oil, bone oil, sperm oil and cod liver oil.

All of these oils may be used either alone or in conjunction with each other. They may be mixed in any suitable ratio and may be specifically formulated for particular uses.

The oil components is used at a level of from 20% to 80% by weight of the total composition. In preferred embodiments of this invention, the oil component constitutes from 25% to 60% by weight of the total composition. In the preferred amounts, the product has little greasy feeling and is very effective in retarding moisture loss from the skin.

According to a preferred embodiment of this invention, a nonionic surface active agent is also included in this composition. The nonionic surfactants which are broadly suitable for use in this invention may be defined as those surfactants which do not ionize in water solution. Preferred are ethoxylated nonionic surface active agents, i.e. nonionic surfactants containing a plurality of oxyethylene groups.

For example, a well known class of nonionic surfactants is made available on the market under the Trade Mark "Pluronic." These compounds are formed by condensing ethylene oxide with a hydrophobic base formed by the condensation of propylene oxide with propylene glycol. The hydrophobic portion of the molecule which, of course, exhibits water insolubility has a molecular weight of from about 1100 to 2500. The addition of polyoxyethylene radicals to this hydrophobic portion tends to increase the water solubility of the molecule as a whole, and the liquid character of the product is retained up to the point where polyoxyethylene content is about 50% of the total weight of the condensation product.

Other suitable nonionic surfactants include:

(1) The polyethylene oxide condensates of alkylphenols, e.g. the condensation products of alkylphenols or dialkylphenols wherein the alkyl group contains from 6 to 12 carbon atoms in either a straight chain or branched chain configuration, with ethylene oxide, the said ethylene oxide being present in amounts equal to 5 to 25 moles of ethylene oxide per mole of alkylphenol. The alkyl substituent in such compounds may be derived from polymerized propylene, diisobutylene, *n*-octene, or *n*-nonene, for example.

(2) The condensation product of 1 mole of (an) aliphatic alcohol(s) having from 8 to 18 carbon atoms, in either straight chain or branched chain configuration with 3 to 50 moles of ethylene oxide, e.g., a coconut alcohol-ethylene oxide condensate having from 10 to 30 moles of ethylene oxide per mole of coconut alcohol, the coconut alcohol fraction having from 10 to 14 carbon atoms.

(3) Those derived from the condensation of ethylene oxide with the product resulting from the reaction of propylene oxide and ethylenediamine. For example, compounds containing from 40% to 80% polyoxyethylene by weight and having a molecular weight of from about 5,000 to about 11,000 resulting from the reaction of ethylene oxide groups with a hydrophobic base constituted of the reaction product of ethylenediamine and excess propylene oxide, said base having a molecular weight of the order of 2,500 to 3,000, are satisfactory.

(4) Fatty acid esters of polyoxyethylene sorbitan containing from 10 to 40 oxyethylene units per molecule and containing fatty acid groups having from 8 to 18 carbon atoms.

(5) Long chain tertiary amine oxides corresponding to the following general formula, $R_1R_2R_3N\rightarrow O$, wherein R_1 is an alkyl radical of from 8 to 18 carbon atoms, and R_2 and R_3 are methyl, ethyl, hydroxymethyl or hydroxylethyl radicals. The arrow in the formula is a conventional representation of a semi-polar bond. Examples of amine oxides suitable for use in this invention include dimethyl dodecyl amine oxide, diethyl octyl amine oxide, dimethyl decyl amine oxide, diethyl tetradecyl amine oxide, dimethyl hexadecyl amine oxide, di(hydroxymethyl) dodecyl amine oxide, di(hydroxymethyl) tetradecyl amine oxide, di(hydroxyethyl) octyl amine oxide, di(hydroxyethyl) decyl amine oxide.

These nonionic surface active agents act both as an emulsifier and as a dispersant. They assist in retarding the formation of the objectionable bathtub ring and assist in dispersing the ester and oil mixture over the surface of the water.

Preferably the ethoxylated nonionic surfactants described in (1) to (4) above are utilized in the composition of this invention. In addition to performing the function related above, these ethoxylated nonionics are mild when contacted with the skin. They allow the maximum amounts of the emollient to be adsorbed on the surface of the skin.

Specific examples of these preferred ethoxylated nonionic surface active agents are the following: The condensation product of one mole of dodecylphenol with substantially 20 moles of ethylene oxide, the condensation product of one mole of nonylphenol with substantially 9.5 moles of ethylene oxide, the condensation product of one mole of hexylphenol with substantially 10 moles of ethylene oxide, the condensation product of decylphenol with substantially 16 moles of ethylene oxide, the condensation product of octylphenol with substantially 8 moles of ethylene oxide, the condensation product of octadecanol with substantially 30 moles of ethylene oxide, the condensation product of dodecanol with substantially 15 moles of ethylene oxide, the condensation product of octanol with substantially 10 moles of ethylene oxide, the condensation product of tetradecanol with substantially 18 moles of ethylene oxide, the condensation product of sorbitan dodecanate with substantially 20 moles of ethylene oxide, the condensation product of sorbitan tetradecanate with substantially 25 moles of ethylene oxide, the condensation product of sorbitan octanate with substantially 15 moles of ethylene oxide, and the condensation product of sorbitan hexadecanate with substantially 35 moles of ethylene oxide.

The nonionic surface active agents may constitute from 0 to 10% by weight of the composition of the invention. The capability of the nonionic surfactant to ensure adequate dispersion and emulsification of the oil and esters falls off substantially when used at levels below 2% by weight of the composition. Above the 10% level the surface active agent does not contribute materially, in proportion to its weight, to the effectiveness of the bath oil composition. Maximum effectiveness of the nonionic surface active agent relative to the weight employed is attained at from 4% to 8% by weight of the total composition.

In especially preferred embodiments of this invention an unsubstituted amide, or a monoethanol- or diethanol-amide of a fatty acid having an acyl moiety of from 8 to 18 carbon atoms is present in the composition. These amides are normally derived from naturally occurring glycerides (e.g. coconut oil, palm oil, soyabean oil and tallow) but can be derived from synthetic fatty acids, obtained for example by the oxidation

of petroleum or by hydrogenation of carbon monoxide by the Fischer-Tropsch process.

These particular amides can be utilized alone or in combination with the alcohols and hereinbefore described nonionics of this composition. These amides actually emulsify the oil and ester mixture in the bath water. A stable, cloudy, white emulsion is formed in the bath water and no floating emollient layer can be discerned. With an emulsion of this type, only a controlled amount of the oil and ester mixture is deposited on the skin. This is particularly advantageous for people with greasy or oily skin who desire to take advantage of the softening effect of a bath oil yet do not wish to have more than a controlled amount of oil and ester deposited on their skin. An emulsion of this type is also particularly valuable in reducing and, for all practical purposes, eliminating bathtub rings as the emulsified oil and ester flow out of the bath with the waste water.

Specific examples of these amides are the following: N,N-diethanol dodecanamide, N,N - diethanal tetradecanamide, N,N - di - ethanol hexadecanamide, N,N - diethanol decanamide, N,N - diethanol octanamide, N-ethanol dodecanamide, N-ethanol tetradecanamide, N-ethanol octanamide, N-ethanol nonanamide, octanamide and decanamide. The amides are preferably used at levels of from 2% to 10%, more preferably from 4% to 8%, by weight of the total composition.

As another preferred embodiment of this invention, lower molecular weight alcohols containing from 2 to 10 carbon atoms in the molecule are added to this composition. The addition of these alcohols performs several functions. When the alcohols are mixed with a nonionic surface active agent in this composition, they act as a coupling agent which pulls the surface active agent into the mixture of oil and ester. In this manner, a homogeneous system is formed. These alcohols also help disperse the oil and ester mixture, thus again causing a decrease in the thickness of the oil and ester layer on the water and again decreasing the greasy feeling of the skin and the formation of objectionable bathtub rings. Physical properties of the composition of this invention, such as viscosity, cloud point and freezing point, can also be advantageously adjusted through the use of these alcohols. Also, they can be used as a solvent for the higher molecular weight esters of this invention. Lower molecular weight aryl alcohols have the additional advantage of being perfume fixatives.

Alcohols suitable for use in this invention include straight or branched chain saturated aliphatic alcohols having from 2 to 6 carbon atoms in the molecule and aryl and alicyclic alcohols having from 5 to 10 carbon atoms in the molecule. Also suitable for use herein are the polyhydric alcohols having from 2 to 6 carbon atoms. Alcohols containing from about 2 to about 7 carbon atoms are preferred for use in this invention. Specific examples of suitable alcohols are ethanol, propanol, butanol, hexanol, benzyl alcohol, cyclohexanol, 1,2-ethanediol, 1,2-propanediol. Ethanol is the preferred alcohol of this invention.

These alcohols can be added to this composition in amounts of up to 30% by weight of the total composition. The practical minimum to obtain all of the above-stated advantages is 2%. The preferred range for the addition of these alcohols is from 5% to 15% by weight of the total composition.

Colours and perfumes well known in the art may be added in measured amounts to suit individual tastes and add aesthetic appeal. Silicone compounds can also be added to create a smoother feeling and prevent foaming of the bath oil. If foaming is desired, soap or other anionic surface active agents can be added for this purpose. Deodorants and antibacterial agents can be incorporated into the bath oil as a further improvement.

The following specific examples are given in order further to explain and illustrate this invention.

In all of the following specific examples, the ingredients were added in the order listed below. Between each addition, the product was stirred to ensure uniformity of the final bath oil. Since a major factor in consumer acceptance of this type of product is odour, and in view of the high dilution of the product in usage, relatively high levels of perfume are used in these formulations.

EXAMPLE I

The following clear formulation of this invention was compared with a commercially successful bath oil which contained isopropyl-myristate.

	By Weight
Essentially octyl dodecanoate*	50%
Light White Mineral Oil (Graded by United States Pharmacopoeia)	35
Condensation Product of 1 Mole of Nonyl Phenol with 9.5 Moles of ethylene oxide	5
Isopropyl Alcohol	7
Perfume and Colour	3

* The octyl dodecanoate component was prepared by the alcoholysis of a mixture of middle cut coconut methyl esters with a mixture of light cut coconut alcohols. The middle cut coconut fraction contained the following distribution of carbon chain lengths: 1% C_{10}, 68% C_{12}, 24% C_{14} and 7% C_{16}. The light cut fraction contained 4% C_8, 60% C_8, 35% C_{10} and 1% C_{12}.

These two formulations were compared in home use tests. These products were used over a period of time and the users were then asked to register their preferences. They were not informed of the compositions being tested. There was a decided overall preference for the clear composition of this invention.

EXAMPLE II

The following bath oil compositions were prepared. In all the formulations listed below, the product was a clear, homogeneous liquid mixture which, when applied by normal use in the bathtub to the skin, left it feeling smooth, soft and silky. The formation of the bathtub ring was substantially retarded during use of several formulations by using the dispersants and emulsifiers as hereinbefore described.

In the following formulations, the esters, octyl octanoate, octyl dodecanoate, dodecyl octanoate and dodecyl dodecanoate, were prepared from coconut fractions. The octyl octanoate ester is the reaction product of light cut coconut methyl esters and light cut coconut alcohols. The octyl dodecanoate ester is the reaction product of middle cut coconut methyl esters and light cut coconut alcohols while the dodecyl octanoate ester is the reaction product of light cut coconut methyl esters and middle cut coconut alcohols. Middle cut coconut methyl esters and middle cut coconut alcohols were utilized in preparing the dodecyl dodecanoate. The terms "light" and "middle" have been hereinbefore defined.

	Parts by Weight
Formulation 1	
Octyl Dodecanoate	50
Light White Mineral Oil (Graded by United States Pharmacopoeia —U.S.P.)	
Perfume and Colour	3
Formulation 2	
Octyl Octanoate	40
Heavy White Mineral Oil (U.S.P. Grade)	60
Formulation 3	
Octyl Dodecanoate	50
Light White Mineral Oil (U.S.P. Grade)	37
The Condensation Product of 1 Mole of Nonyl Phenol with substantially 9.5 Moles of Ethylene Oxide	6
Ethanol	7
Formulation 4	
2-Ethylhexyl Dodecanoate	52
Lanolin	29
The Condensation Product of 1 Mole of Sorbitan Dodecanoate with substantially 20 Moles of Ethylene Oxide	8
1,2-Propanediol	11
Formulation 5	
Octyl Dodecanoate	43
Light White Mineral Oil (U.S.P. Grade)	47
The Condensation Product of 1 Mole of a Mixture of Isomeric Linear Secondary Alcohols Containing from 11 to 15 Carbon Atoms with substantially 9 moles of Ethylene Oxide	5
Ethanol	5
Formulation 6	
Octyl Dodecanoate	60
Light White Mineral Oil (U.S.P. Grade)	30
Benzyl Alcohol	10
Formulation 7	
Dodecyl Octanoate	40
Light White Mineral Oil (U.S.P. Grade)	50
Hexanol	10
Formulation 8	
Octyl Dodecanoate	42
Heavy White Mineral Oil (U.S.P. Grade)	24
Light White Mineral Oil (U.S.P. Grade)	24
N,N-Diethanol dodecanamide	7
Perfume Colour	3
Formulation 9	
Octyl Dodecanoate	46
Light White Mineral Oil (U.S.P. Grade)	35
The Condensation Product of 1 Mole of Nonyl Phenol with 9.5 Moles of Ethylene Oxide	7
Ethanol	6
N,N-Diethanol dodecanamide	6
Formulation 10	
Octyl Dodecanoate	60
Light White Mineral Oil (U.S.P. Grade)	35
N-Ethanol octanamide	5
Formulation 11	
2-Ethylhexyl Dodecanoate	60
Light White Mineral Oil (U.S.P. Grade)	35
Octanamide	5
Formulation 12	
Octyl Dodecanoate	50
Light White Mineral Oil (U.S.P. Grade)	41
N-Ethanol octanamide	4
Ethanol	5

Formulation 13	
Dodecyl Octanoate	45
Light White Mineral Oil (U.S.P. Grade)	22
Heavy White Mineral Oil (U.S.P. Grade)	23
Tetradecanamide	5
2-Propanol	5
Formulation 14	
Octyl Octanoate	50
Light White Mineral Oil (U.S.P. Grade)	40
N,N-Diethanol dodecanamide	5
Butanol	5
Formulation 15	
Octyl Dodecanoate	46
Light White Mineral Oil (U.S.P. Grade)	35
The Condensation Product of 1 Mole of Nonyl Phenol with 9.5 Moles of Ethylene Oxide	7
Ethanol	6
N-Ethanol dodecanamide	6
Formulation 16	
Dodecyl Octanoate	46
Light White Mineral Oil (U.S.P. Grade)	36
The Condensation Product of 1 Mole of Sorbitan Dodecanoate with substantially 20 Moles of Ethylene Oxide	6
Ethanol	6
Dodecanamide	6

In all of the above formulations, other of the esters in the range hereinbefore delineated may be substituted for the ones mentioned either in a single compound form or as the blends derived from such natural sources as coconut oil. Substitution of higher molecular weight esters results in oilier products, while substitution of lower molecular weight esters results in less oily products. Use of esters beyond the C_{14} acid/C_{14} alcohol ester results in a very thick product which also tends to increase the problem of the bathtub rings. Below the C_8 acid/C_8 alcohol ester, the product loses therapeutic and emollient value.

Additionally, any of the hereinbefore described oils, nonionic surface active agents or alcohols may be substituted for like compounds in the Examples. Perfumes and colour are added to suit individual taste, but form no essential part of this invention, merely adding aesthetic appeal. "Consisting" as used in the appended claims and elsewhere herein with reference to the liquid composition should accordingly be construed so as not to exclude such inessential ingredients.

WHAT WE CLAIM IS:—

1. A clear homogeneous non-aqueous liquid composition consisting of
   - from 20% to 80% by weight of at least one ester having a saturated aliphatic alcohol moiety of from 8 to 14 carbon atoms and an aliphatic carboxylic acid moiety of from 8 to 14 carbon atoms,
   - from 20% to 80% by weight of mineral or fatty oil,
   - from 0 to 30% by weight of an alcohol having from 2 to 10 carbon atoms in the molecule,
   - from 0 to 10% by weight of an unsubstituted amide, or a monoethanolamide or diethanolamide of a fatty acid having an acyl moiety of from 8 to 18 carbon atoms, and
   - from 0 to 10% by weight of a nonionic surface active agent other than said fatty acid amides,

   up to 15% by weight of the total ester or esters optionally being replaced by one or more esters of which the ester acid moiety contains from 4 to 7 or from 15 to 18 carbon atoms, the other moiety containing from 4 to 18 carbon atoms.

2. A clear non-aqueous liquid composition according to claim 1 in which the proportion of ester is from 40% to 75% by weight.

3. A clear non-aqueous liquid composition according to claim 1 or claim 2 in which the alcohol and acid moieties of the ester group each contain from 8 to 12 carbon atoms.

4. A clear non-aqueous liquid composition according to claim 3 in which the ester is octyl dodecanoate.

5. A clear non-aqueous liquid composition according to any of claims 2 to 4 in which the proportion of oil is from 25% to 60% by weight.

6. A clear non-aqueous liquid composition according to any of the preceding claims in which the mineral oil is light white mineral oil.

7. A clear non-aqueous liquid composition according to any of the preceding claims in which the alcohol is an aliphatic alcohol having from 2 to 6 carbon atoms in the molecule.

8. A clear non-aqueous liquid composition according to claim 7 in which the alcohol is ethanol.

9. A clear non-aqueous liquid composition according to any of claims 1 to 6 in which the alcohol is an alicyclic or aryl alcohol having from 5 to 10 carbon atoms in the molecule.

10. A clear non-aqueous liquid composition according to claim 9 in which the alcohol is benzyl alcohol.

11. A clear non-aqueous liquid composition according to any of the preceding claims

in which the proportion of alcohol in the composition is from 5% to 15% by weight.

12. A clear non-aqueous liquid composition according to any of the preceding claims in which the nonionic surface active agent is an ethoxylated nonionic surface active agent.

13. A clear non-aqueous liquid composition according to claim 12 in which the ethoxylated nonionic surface active agent is the condensation product of one mole of nonyl phenol with substantially 9.5 moles of ethylene oxide.

14. A clear non-aqueous liquid composition according to any of the preceding claims in which the proportion of nonionic surface active agent is from 4% to 8% by weight.

15. A clear non-aqueous liquid composition according to any of the preceding claims in which the amide is N,N-diethanol dodecanamide.

16. A clear non-aqueous liquid composition according to any of the preceding claims in which the proportion of amide is from 4% to 8% by weight.

17. A clear non-aqueous liquid composition according to claim 1 and substantially as described in Example I herein.

18. A clear non-aqueous liquid composition substantially as described in any one of Formulations 1 to 16 herein.

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